REMARKS

Claims 1-22 are pending. In an office action mailed October 7, 2004 (Paper No. 10), claims 1-4, 11-13,19-20 were rejected under 35 U.S.C. 102(e) as being anticipated by Koh et al. (US Patent No. 6,104,745). Claims 5,6,10,14,15,21 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Koh et al in view of Nash et al (U.S. Patent No. 6,397,044B1). Claims 9, 16-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Koh et al (US Patent No. 6,104,745) in view of Nash et al (US Patent No. 6,397,044) in further view of Bickley (US Patent No. 5,152,005). These rejections are respectfully traversed.

Rejections Under 35 USC 102

Claims 1-4, 11-13 and 19-20 stand rejected under 35 U.S.C. 102(e) as being anticipated by Koh. In response to the office action dated March 24, 2004 (Paper No. 9), applicants had previously argued that Koh fails to provide a basis for rejection under 35 U.S.C. 102 because it fails to disclose each element of the claimed invention. In particular, Koh discloses a phase-locked loop, but the invention of claim 1 includes "a local oscillator coupled to the direct conversion receiver." Claim 11 includes "mixing the carrier signal with a subharmonic local oscillator signal to extract a baseband signal; multiplying the subharmonic local oscillator signal; and modulating an outgoing data signal with the multiplied subharmonic local oscillator signal." Claim 20 includes "a local oscillator generating a signal having a subharmonic frequency of the carrier signal." As described in detail in the response to the previous office action, a local oscillator is not a phase-locked loop. The Examiner states in the pending office action that Applicant's arguments have been considered but are moot in view of the new grounds of rejection, but no new grounds of rejection have been imposed – as such, Applicants have been deprived of the opportunity of responding to whatever arguments the Examiner may have on this point. Accordingly, any subsequent office action that upholds the rejection of claims Claims 1-4, 11-13 and 19-20 stand rejected under 35 U.S.C. 102(e) as being anticipated by Koh must not be made final.

Rejections Under 35 USC 103

Claims 5, 6, 10, 14, 15, 21 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Koh in view of Nash. These rejections are respectfully traversed.

Koh in view of Nash fails to provide a prima facie basis for the rejection of claims 5, 6, 10, 14, 15, 21 and 22, because they fail to disclose each element of the claimed invention. As described above, Koh fails to disclose a local oscillator and instead discloses a phase locked loop. As described in the response to the office action mailed May 7, 2003 (Paper No. 5), Nash fails to disclose a direct conversion receiver and instead discloses a receiver local oscillator 22 and a transmitter voltage controlled oscillator 31. It is impossible to combine Nash, which discloses a separate transmitter and receiver, with Koh, which discloses a direct conversion receiver. Such a combination would be akin to combining a gasoline engine carburetor with a diesel engine – there is simply no motivation to do so. Furthermore, the Examiner has acknowledged that Nash fails to be relevant to the claimed invention by withdrawing the rejection of the claims over Nash in Paper No. 5. Third, the combination is inoperative. Consider claim 5, which includes " a frequency multiplier coupled between the local oscillator and the transmitter," whereas Nash plainly discloses, as the Examiner acknowledges, a phase locked loop that is **coupled to the oscillator**, and which is not coupled between the local oscillator and the transmitter. As shown in exemplary Figure 1 of the pending application, multiplier 116 is coupled between local oscillator 114 and power amplifier 120. In contrast, Nash discloses a loop of components 32, 33, 36, 38 and 39 coupled to transmit oscillator 31 of Nash, but which is not coupled between the local oscillator and the transmitter. As can be plainly seen in Figure 1 of Nash, there are no components between transmit oscillator 31 and the PA Module.

Claim 7 includes "a frequency multiplier coupled to the local oscillator; and an in-phase/quadrature modulator coupled to the frequency multiplier, receiving an in-phase modulation input signal and a quadrature modulation input signal, and outputting a quadrature phase shift keyed signal modulated at the multiplied local oscillator frequency." As previously noted, the oscillator of Nash relied on by the Examiner is a transmit oscillator, not a direct conversion receiver local oscillator that is used for transmit and receive functions. Coupling the phase modulation loop of Nash onto the phase-locked loop of Koh would cause the received signal of Koh to be phase modulated, rendering it inoperable. Where is the additional circuitry that would be required to disable the phase modulation loop of Nash during a receive cycle? How would it be designed? The suggested combination is simply inoperative.

Claim 8 includes "an in-phase/ quadrature modulator coupled to the local oscillator, receiving an in-phase modulation input signal and a quadrature phase shift keyed signal modulated at the local oscillator frequency; and a frequency multiplier coupled phase/quadrature modulator

and multiplying the quadrature phase shift keyed signal." As previously noted, the oscillator of Nash relied on by the Examiner is a receiver oscillator, not a direct conversion receiver local oscillator that is used for transmit and receive functions. Coupling the in-phase and quadrature circuitry of Nash onto the phase-locked loop of Koh would cause the transmitted signal of Koh to be in-phase and quadrature modulated, rendering it inoperable. Where is the additional circuitry that would be required to disable the in-phase and quadrature modulation of Nash during a transmit cycle? How would it be designed? The suggested combination is simply inoperative.

In regards to claims 10, 14, 15, and 19, the combination of Koh and Nash suffers from similar problems – some additional circuitry would be required to allow the single phase locked loop of Koh to be used during transmit and receive cycles with the additional circuitry of Nash that is sewed onto Koh in a Frankenstein-monster-like manner by the Examiner in an attempt to yield a combination that anticipates the claimed invention. However, unlike the mad doctor of Mary Shelley's novels, the Examiner is unable to breathe life into the monster created by the combination of Koh and Nash – it simply won't work. The Examiner has used the claimed invention as a blueprint for combining unrelated pieces of prior art together into an inoperative clump of circuitry, which is not only impermissible under Federal Circuit law but also under the laws of nature, which would prevent the combination of Koh and Nash suggested by the Examiner from working. Withdrawal of this rejection is respectfully requested.

Claims 9, 16-18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Koh in view of Nash in further view of Bickley. These rejections are respectfully traversed.

As previously discussed, the combination of Koh and Nash is inoperative. Bickley fails to correct the problems that arise from combining Koh and Nash, and merely demonstrates that additional circuitry would be required to switch the functionality from Nash that is stapled onto Koh on and off during transmit and/or receive cycles, depending on whether the functionality applies to the transmit oscillator or the receiver oscillator of Nash. Bickley, being drawn only to circuitry for creating a selected one of any of a plurality of chosen discrete frequencies within a predetermined band, fails to teach how to glue together circuitry from a circuit like Nash, that has a receive oscillator and a transmit oscillator, into direct conversion receiver and transmitter circuitry, such as that of Koh. Withdrawal of these rejections is respectfully requested.

New claim 23 is provided that further distinguishes over Koh. Claim 23 includes the "system of claim 20 wherein an antenna is directly connected to the low noise amplifier, and the

low noise amplifier is directly connected to the one or more subharmonic local oscillator mixers." As can be seen from Koh, band pass filters are required to remove noise, which also increases the power requirement of the low noise amplifier of amplifier of Koh. The present invention avoids the need for band pass filters as well as the increased power requirements of the circuit of Koh.

CONCLUSION

In view of the foregoing remarks and for various other reasons readily apparent, Applicant submits that all of the claims now present are allowable, and withdrawal of the rejections and a Notice of Allowance are courteously solicited.

If any impediment to the allowance of the claims remains after consideration of this amendment, and such impediment could be alleviated during a telephone interview, the Examiner is invited to telephone the undersigned at (214) 939-8657 so that such issues may be resolved as expeditiously as possible. Please note the change of correspondence address for any future communications regarding this application.

Please charge the fee in the amount of $50.00 for one extra dependent claim to deposit account of Godwin Gruber, LLP, No. 50-0530. If any applicable fee or refund has been overlooked, the Commissioner is hereby authorized to charge any fee or credit any refund to the deposit account of Godwin Gruber, LLP, No. 50-0530.

Respectfully Submitted,

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